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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,449	09/01/2006	Yuji Aoki	AOKI3008/GAL/PMB	1641
23364 7590 12/15/2010 BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314-1176				
EXAMINER				
WOOD, JARED M				
ART UNIT		PAPER NUMBER		
1731				
MAIL DATE		DELIVERY MODE		
12/15/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### ATTACHMENT TO THE ADVISORY ACTION

Applicant's amendment to claims 1 and 12 is sufficient to obviate the claim objections provided in the previous action. As such, the objections have been withdrawn.

On page 8 of the response filed 11/30/2010, applicant has argued that Paranthaman's first layer comprising the formula  $\text{RMNO}_3$  would not contain a charge compensation element (CCE). This argument is irrelevant. The examiner has not relied upon the disclosures of Paranthaman and Chen to provide such an element to this layer. The  $\text{RMnO}_2$  layer, as applied by the examiner comprises cerium and a "solid solution formation element" (SSFE) (as defined by applicant) selected from the group comprising Y, Nd, Sm, Gd, Eu, Yb, Ho, Tm, Dy, La, and Er). The second  $\text{CeO}_2$  layer disclosed by Paranthaman was modified by the disclosure of Chen in order to provide for including a transition metal oxide in the second layer along with Paranthaman's ceria in order to provide improved property matching between the layers and the substrate in order to prevent cracking in the layers.

Applicant further argues on page 8 that Chen does not disclose including a CCE in the buffer layers. Although, Chen does not include metals which applicant has identified as CCEs in the buffer layers for the express purpose of providing charge compensation, Chen clearly providing transition metal oxides, which includes elements such as Nb, Ta, and V, which applicant has classified as CCEs, in buffer layers, as shown by the examiner in the previous action. Whether Chen relies on these elements for applicant's desired property is irrelevant. The presence of these elements is sufficient to meet the limitations of the claims.

Applicant provides similar remarks in reference to providing elements which applicant has identified as SSFEs in the first layer according to the disclosure of Paranthaman. Applicant

further states on page 9 that the skilled artisan would not have modified Paranthaman, according to the disclosure of Chen, in order to prevent the diffusion of nickel into the superconductive layer. These arguments are irrelevant for the same reason previously cited above. The fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

On page 9, applicant alleges that the combination of Paranthaman and Chen, as applied by the examiner, would not provide applicant's desired affect. However, applicant has provided no evidence or rationale for such an allegation except to cite an alternative embodiment disclosed by Paranthaman which has a significantly different structure than that of the combination as relied upon by the examiner. Further, applicant has cited Paranthaman's disclosed LMO layer without a ceria layer embodiment as evidence that the combination relied upon by the examiner would not be obvious since Paranthaman's LMO layer is sufficient to prevent Ni diffusion. Although Paranthaman does disclose the embodiment cited by applicant, teachings to a preferred embodiment are not evidence against a less preferred embodiment. The embodiment relied upon by the examiner is disclosed to be a viable embodiment. The alternative embodiment Paranthaman, cited by applicant, does not negate the embodiment relied upon by the examiner.

Lastly, applicant has argued that the content of the SSFE and CCE in the combination of Paranthaman and Chen, as relied upon by the examiner is not 5-60% of the total metal content in the buffer layers as claimed by applicant. This is incorrect. As cited in the previous action, the first layer of Paranthaman is of the formula  $\text{RMnO}_3$  where R comprises at least two elements including Ce. Therefore a more specific formula for this layer may be written (for purpose of

example only using Gd)  $\text{Ce}_x\text{Gd}_{1-x}\text{MnO}_3$  where x may be any number between 0 and 1. Thus in the 2nd layer Mn comprises 50% of the metal content of the layer, Ce comprises between 0 and 50%, and Gd (the SSFE) comprises between 0 and 50%. Chen discloses an exemplary ceria layer which comprises 1-35% of a dopant which would correlate to the CCE. Each layer's respective SSFE and CCE content overlaps applicant's claimed range. Since each layer individually overlaps the range, the combined CCE and SSFE content will also overlap applicant's claimed range regardless of the relative thicknesses and densities of each layer. As to applicant's argument that one would not be motivated to provide the CCE and the SSFE in sufficient quantities to effect charge compensation and to prevent diffusion, as discussed previously, applicant's different reasons for combining is irrelevant since the prior art provides a viable alternative reason for combination.

/JARED WOOD/

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